

## Double Integration Practice: Switching Order of Integration

Switch the order of the following double integrals, evaluating any integral where the integrand is actually specified. Always sketch the region of integration!

1.  $\int_0^2 \int_{x/2}^1 f(x, y) dy dx$

2.  $\int_0^1 \int_2^{4-2x} f(x, y) dy dx$

3.  $\int_0^1 \int_{-\sqrt{1-x^2}}^{\sqrt{1-x^2}} f(x, y) dy dx$

4.  $\int_0^1 \int_{y^2}^{y^{1/3}} f(x, y) dx dy$

$$5. \int_0^{\ln 10} \int_{e^x}^{10} \frac{1}{\ln y} dy dx$$

$$6. \int_0^\pi \int_x^\pi \frac{\sin y}{y} dy dx$$

$$7. \int_0^2 \int_0^{4-x^2} \frac{x e^{2y}}{4-y} dy dx$$

$$8. \int_0^{2\sqrt{\ln 3}} \int_{y/2}^{\sqrt{\ln 3}} e^{x^2} dx dy$$